Custom Gene Synthesis

Gene Synthesis

Blue Heron's patented GeneMaker® technology provides the capability to synthesize any DNA sequences for you, with few exceptions. Please contact our tech support team with any questions.

OriGene shuttle vectors

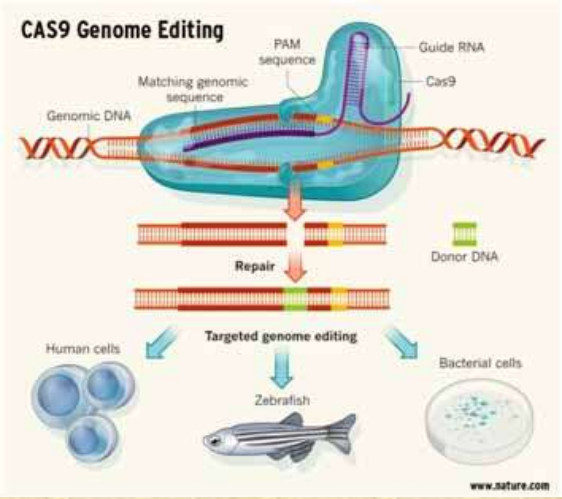
Express your insert in E. coli or mammalian cells. Low cost & multiple functional vectors available.

Customer provided vectors

Have your own vector? Please submit your vector sequence and features through our secure website after registering. Your vector is securely stored and can be used for future orders. Blue Heron will require the physical vector once your order is placed.

CRISPR Cas9 Genome Editing

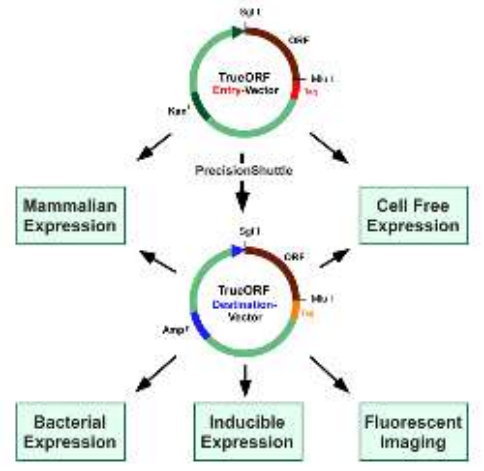
The latest tool in genome editing – CRISPR/Cas9 – allows for specific genome disruption and replacement in a flexible and simple system resulting in high specificity and low cell toxicity. The CRISPR/Cas9 genome editing system requires the co- expression of a Cas9 protein with a guide RNA vector expressed from the human U6 polymerase III promoter. With the protospacer-adjacent motif (PAM - the sequence NGG) present at the 3' end, Cas9 will unwind the DNA duplex and cleave both strands upon recognition of a target sequence by the guide RNA.



Expression Vectors

Blue Heron Bio is pleased to offer OriGene's affordable PrecisionShuttle™ system for easy subcloning into a large selection of proven destination vectors for a variety of downstream applications. Destination vector choices include:

- Epitope tags (MYC, DDK, etc.) for protein purification detection
- Fluorescent tags (GFP, RFP, YFP, etc.) for protein visualization
- Various drug markers (neomycin, puromycin, etc.) for stable cell line establishment
- Inducible expression (pTUNE)
- E. coli expression vectors
- Custom requests



Expression Optimization

Blue Heron Bio has developed a proprietary algorithm for protein expression optimization. Based on codon usage and comprehensive knowledge of optimal RNA structure for protein translation, Blue Heron can confidently deliver results in the desired organism.

Advantages

- Reliable – a proven algorithm: successfully used by many researchers (Survey Result).
- Flexible – exclude unwanted restriction sites and special sequences, use a customer's codon table, add flanking sequences.
- Free – no charge for registered users
- Easy to use

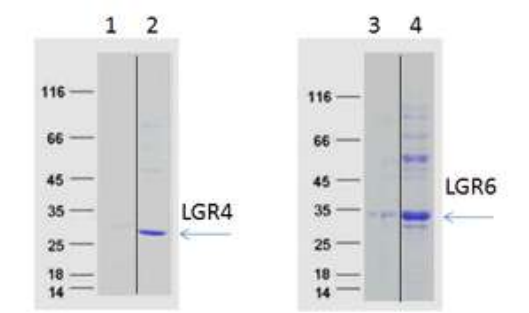
Procedure

- Login, or create a new account
- Submit a protein sequence (when starting with a DNA sequence, please use our translation tool for conversion)
- Select your model organism or your own codon table

- Check any restriction sites to be avoided (optional)
- Enter any special sequences to be avoided (optional)
- Add flanking sequences (optional)
- An optimized sequence will be emailed and posted on your secure account

Customer Example

Protocol: LGR4 and LGR6 proteins' coding sequences were optimized using Blue Heron's proprietary algorithm. Wild type and optimized sequences were cloned separately in pCMV-Entry vector. Each DNA was transiently transfected to HEK293T cells and incubated for 72 hrs. Proteins were purified using anti-DDK affinitive column and run on SDS PAGE, then stained with Coomassie Blue.



Lane 1: construct with a wild type LGR4 DNA sequence
Lane 2: construct with an optimized LGR4 DNA sequence
Lane 3: construct with a wild type LGR6 DNA sequence
Lane 4: construct with an optimized LGR6 DNA sequence

22310 20th Avenue

SE #100, Bothell,

WA 98021 USA,

For more information please visit

http://www.blueheronbio.com